

SAN FRANCISCO PUBLIC LIBRARY



3 1223 09951 9390

5/S



*San Francisco Public Library*

Government Information Center  
San Francisco Public Library  
100 Larkin Street, 5<sup>th</sup> Floor  
San Francisco, CA 94102

REFERENCE BOOK

*Not to be taken from the library*

D  
REF  
388.411  
Sa52ma



# **Market Street Transit Thoroughfare**

## **Project Plan**

**PROJECT MANAGEMENT DIVISION  
BUREAU OF ENGINEERING  
DEPARTMENT OF PUBLIC WORKS**

July 20, 1987



July 19, 1987

Subject: MaSTT Project Plan

Mr. Don Cameron  
MaSTT Project Director  
425 Geneva Avenue, Room 205  
San Francisco, California 94112

Dear Mr. Cameron

Enclosed is the Market Street Transit Thoroughfare (MaSTT) Project Plan which was finalized at the MaSTT Project Team meeting on July 14, 1987.

This plan provides an overview of the project, a summary of existing conditions, a schematic plan of the project area, an organization chart, a work breakdown structure and linear responsibility chart, a project schedule, and a project budget.

The plan calls for expending \$27,000,000 to reconstruct the Municipal Railway streetcar tracks on Market Street from Fremont to Twelfth Streets and make related improvements. To stay within this budget, it was necessary to eliminate granite gutters from the project. We feel elimination of these gutters does not detract from the project because the existing gutters have proven to be a serious maintenance problem. Although brick crosswalks are included in the project, we are continuing our efforts to identify substitute materials which will maintain the visual appearance of the street at a substantially lower maintenance cost. A sample of the proposed materials will be installed at Eleventh and Market Streets for review by all concerned. We realize that substitution of materials will require review by the Public Utilities Commission, the Art Commission, and the Board of Supervisors.

To fund the project, DPW will contribute roughly \$2,000,000 in Gas Tax Funds and PUC/MUNI will provide the balance from grants and other sources.

As Project Manager, I am requesting that you approve this plan so we can proceed with the work. I am enclosing ten copies of the project plan in case you wish to present it to your Commission. Once the plan is approved, we will use DPW procedures to begin design, hire consultants, and award procurement and construction contracts. We will report progress to you on a monthly basis and prepare presentations to your Commission at whatever frequency you desire. We will seek your approval before doing any work which would require changes to the project plan.

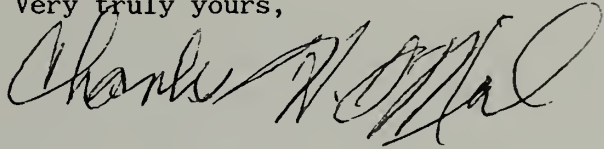


July 19, 1987

Subject: MaSTT Project Plan

I am looking forward to working with you on this challenging and exciting project. Please let me know if you need any additional information.

Very truly yours,

A handwritten signature in black ink, appearing to read "Charles H. O'Neil", written in a cursive style.

Charles H. O'Neil

Project Manager  
Market Street  
Transit Thoroughfare





**Contents**

<u>Project Overview</u> . . . . .	3
Objective . . . . .	3
Goals . . . . .	3
Background . . . . .	4
Schedule . . . . .	4
Budget . . . . .	4
 <u>Summary of existing conditions</u> . . . . .	 5
 <u>Schematic Plan</u> . . . . .	 6
 <u>Project Organization Chart</u> . . . . .	 7
 <u>Work Breakdown Structure diagram</u> . . . . .	 8
 <u>Work Breakdown Structure</u> . . . . .	 9
A. Management . . . . .	9
B. Street Regrading/Repaving . . . . .	9
C. Track Work . . . . .	10
D. Boarding Islands . . . . .	10
E. Traffic . . . . .	11
F. Signals and Signs . . . . .	11
G. Crosswalks . . . . .	12
H. Curbs, Gutters & Sidewalks . . . . .	12
I. Street Furniture . . . . .	13
J. Trees . . . . .	14
K. Handicap Ramps . . . . .	14
L. Art Program . . . . .	14
M. City Utilities . . . . .	15
N. Catch Basins . . . . .	15
O. Sewers . . . . .	16
P. Private Utilities . . . . .	16
 <u>Linear Responsibility Chart</u> . . . . .	 18
 <u>Project Schedule (Gantt Chart)</u> . . . . .	 21
 <u>Project Budget</u> . . . . .	 22
 <u>Financial Resources</u> . . . . .	 22
 <u>Budget Details</u> . . . . .	 23
Design Engineering Budget . . . . .	23
Construction Management Budget . . . . .	23
Wish List . . . . .	23
 <u>Budget Assumptions</u> . . . . .	 24



PROJECT PLANMARKET STREET TRANSIT THOROUGHFARE  
Phase "A" - Fremont to Twelfth StreetsProject Overview

Objective: To reconstruct the Municipal Railway tracks on Market Street from the east property line of Fremont Street (approximately Station 25+75 in Market St.) to the west property line of Twelfth Street (approximately Station 116+15 in Market St.) and do related work. This work also includes: the track work and island in Fremont Street from the south property line of Market Street to approximately 120 feet south of the south property line; the turnout, crossing and track connection at First and Market Streets. The replacement of the Eleventh Street Y - track which extends approximately 105 feet south of the south property line of Market Street in Eleventh Street is presently being examined.

The project will include:

- \* Street and track reconstruction and repaving.
- \* Installation of permanent boarding islands.
- \* Realignment of curbs adjacent to boarding islands, and associated sidewalk reconstruction.
- \* Completion of the Market Street Beautification Project as an integral component of the transit thoroughfare concept.

- Goals:
1. Develop the project team (intra- and inter-departmental).
  2. Reestablish liaison with the Market Street Community Advisory Committee. Develop a public information program.
  3. Resolve the pending design issues (i.e., material used for construction of crosswalks, gutters, islands and street furniture).
  4. Design, advertise, award the contracts for all long lead items (i.e., rail and switches) so that the material is available at the start of the normal construction contracts (April 1, 1988).
  5. Design, advertise, award, and manage construction of the project.



Background: In 1968, the Board of Supervisors approved the Schematic Street Design Plan for Market Street (Res. 116-68). This is the Ciampi - Halprin - Warnecke (Market Street Joint Venture Architects) plan under which Market Street has been reconstructed from Steuart Street to McCoppin Street. This plan assumed that MUNI Metro would replace all existing streetcars on Market Street and that the streetcar tracks would eventually be removed. The plan also anticipated that most public transit would disappear from Market Street east of Van Ness Avenue and that there would be no need for MUNI overhead lines to power the transit vehicles.

In 1978, the Board of Supervisors amended the original Schematic Street Design Plan for Market Street to require that the MUNI overhead lines be retained (Res. 213-78).

In 1979, the Board assumed control of any track or boarding island removal on Market Street (Res. 846-79).

In 1981, the Board authorized a "Market Street Design Study" (Res. 240-81) to review transit operations and street design, including the retention of streetcars.

In 1983, the Board called for four lanes of MUNI service east of Van Ness Avenue with "safe and aesthetically designed passenger loading islands and overhead wires". The Board also supported retention of surface streetcar operations including the upgrading of streetcar tracks east of Van Ness Avenue (Res. 160-83).

In 1984, the Market Street Planning Project was created. The Project Team Final Report issued in November 1985 will serve as the basis for all design work that will be done during this project. It is also the reference source used to prepare this background.

Schedule: The preliminary schedule for the project is to finish design by the end of 1987 and to finish construction by Thanksgiving 1989.

Project Milestones:

April 1, 1987 - \$1.1 million in design funds arrives.

April 1, 1988 - \$11.5 million in construction funds arrives.

April 1, 1989 - \$12.3 million in construction funds arrives.

Budget: Project cost is budgeted to be \$27,000,000.





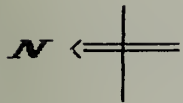
## Summary of Existing Conditions

Cross Street Names		Block Numbers	Finished Curbs & Gutters	Street at Final Grade
North Side	South Side			
Front Street	Fremont Street	1	-	-
Bush & Battery	First Street	2	-	-
Sansome & Sutter	Second Street	3	-	yes
		4	-	yes
Post & Montgomery	New Montgomery	5	-	-
Geary & Kearny	Third Street	6	-	-
O'Farrell & Grant	Fourth Street	7	-	yes
Ellis & Stockton		8	-	yes
Fifth Street North	Fifth Street	9	-	-
Turk & Mason	Sixth Street	10	-	-
Golden Gate & Taylor		11	-	-
McAllister & Jones		12	-	-
Seventh Street North	Seventh Street	13	yes	yes
Grove & Hyde	Eighth Street	14	yes	-
Hayes & Larkin	Ninth Street	15	yes	-
Fell & Polk	Tenth Street	16	yes	-
Van Ness Avenue	Eleventh Street	17	yes	yes
	South Van Ness	18	yes	yes
	Twelfth Street			
Total Blocks			6	7
Percent of blocks			33%	39%

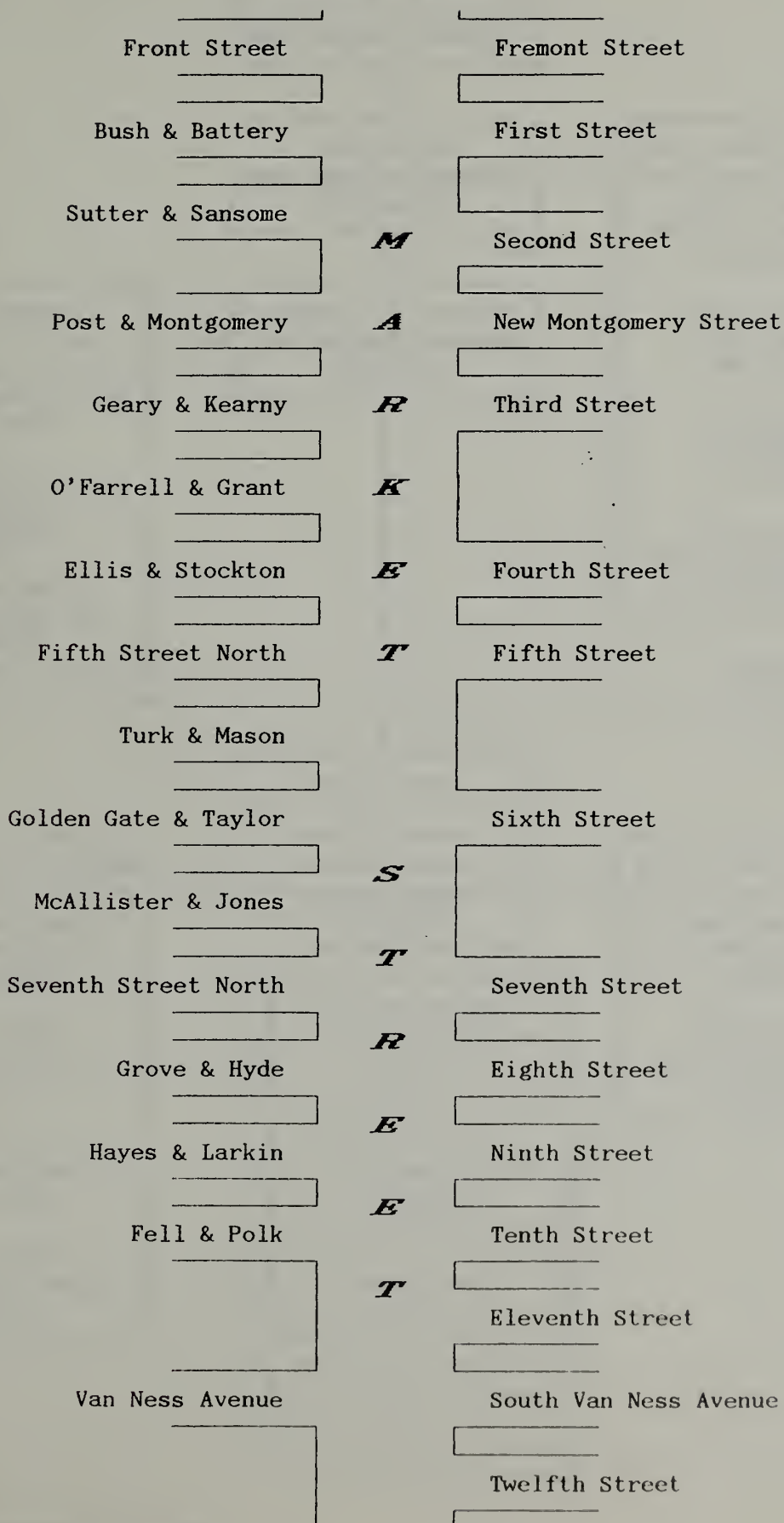




# Schematic Plan

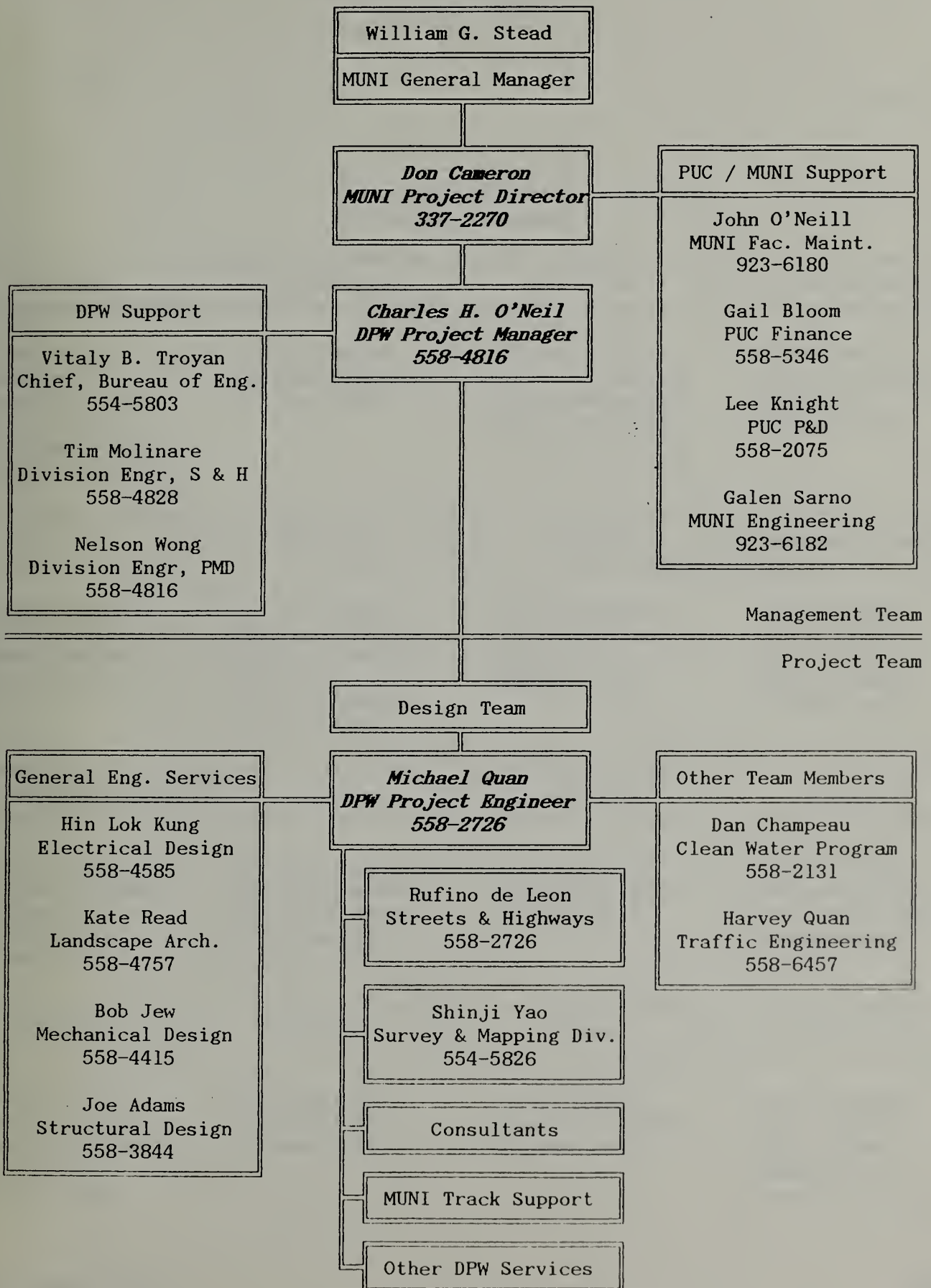


Not To  
Scale





# Organization Chart





Market Street Transit Thoroughfare  
Preliminary Engineering  
Work Breakdown Structure

July 19, 1987

Preliminary Engineering

A. Management

- Project Management
- Concept Review
- Funding Coordination
- Public Information
- Grants Administration
- Contract Administration

B. Street Regrade/Repave

- Existing Conditions
- Operational Requirements
- Preliminary Design

C. Track Work

- Existing Conditions
- Operational Requirements
- Material Requirements
- Material Availability
- Preliminary Track Design

D. Boarding Islands

- Proposed Location
- Architectural Concept
- Material Choice
- Preliminary Design

E. Traffic

- Existing Conditions
- Operational Requirements
- Staging Assumptions
- Detouring Options

F. Signals & Signs

- Existing Conditions
- Operational Requirements
- Architectural Concept
- Material Requirements
- Material Availability
- Preliminary Design

G. Crosswalks

- Existing Conditions
- Architectural Concept
- Material Choice
- Preliminary Design

H. Curb, Gutter, Sidewalk

- Existing Conditions
- Architectural Concept
- Material Choice
- Sidewalk Legislation
- Preliminary Design

I. Street Furniture

- Existing Conditions
- Operational Requirements
- Architectural Concept
- Material Choice
- Preliminary Design

J. Trees

- Existing Conditions
- Operational Requirements
- Material Requirements
- Material Availability
- Preliminary Design

K. Handicap Ramps

- Existing Conditions
- Subsidewalk Basements
- Preliminary Design

L. Art Program

- Existing Facilities
- Architectural Concept
- Concept Review & Approval
- Preliminary Design

M. City Utilities

- Existing Conditions
- Identify Conflicts
- Operational Requirements
- Facility Changes
- Preliminary Design

N. Catch Basins

- Existing Conditions
- Operational Requirements
- Preliminary Design

O. Sewers

- Existing Conditions
- Operational Requirements
- Preliminary Design

P. Public Utilities

- Existing Conditions
- Identify Conflicts
- Facility Changes
- Schedule of Work
- Coordination of Work





Preliminary Engineering  
Work Breakdown Structure

A. Management

A.1 Project Management

Planning, organizing, directing, and controlling the available resources to complete the project.

A.2 Concept Review

Review the project concept as detailed in the Market Street Planning Project Final Report including: identify all outstanding design issues; verify project budget; identify potential design issues; identify related items not covered in Final Report.

A.3 Funding Coordination

Establish the necessary procedures to appropriate, expend, monitor and report on the funding that has been and will be dedicated to the project.

A.4 Client Coordination

Establish the necessary procedures to insure appropriate client input, coordination and review to maintain client support and participation.

A.5 Grants Administration

Establish the necessary procedures to insure appropriate monitoring, control and reporting of all expenditures of the project.

A.6 Contract Administration

Establish the necessary procedures to insure appropriate use, work and control of the various consultants hired to work on the preliminary design for the project.

B. Street Regrading/Repaving

B.1 Existing Conditions

Determine existing street conditions including: existing street and cross-street grades; existing pavement condition; existing pavement section(s); existing utility locations. Identify areas that require immediate temporary repairs.

B.2 Operational Requirements

Determine operational requirements including: track grade requirements; cross-street grading requirements; allowable temporary paving requirements during construction. Determine pavement materials that will structurally support bus loading.

B.3 Preliminary Design

Do preliminary design including center line grades, areas requiring reconstruction and areas that can be planed and resurfaced. Identify potential utility conflicts.





### C. Track Work

#### C.1 Existing Conditions

Determine existing condition of track work including: condition of track in BART areas; track west of Twelfth Street that will be connected to; track around the Transbay Terminal loop that will be used at least until all Market Street track is installed; location and condition of overhead trolley and streetcar lines and supporting equipment. Identify any areas that require immediate temporary repairs. Investigate severity of gap between BART grating and streetcar tracks (potential bicycle hazard).

#### C.2 Operational Requirements

Determine operational requirements during construction for streetcars, trolleys and buses. Examine possible schedule changes, routing changes and service substitutions that could be implemented. Develop any special criteria for track grading and coordinate this with the street design. Develop solution to gap between BART grating and streetcar tracks which is a potential bicycle hazard. Confirm the condition of the overhead equipment and identify any changes that will be required to implement streetcar service.

#### C.3 Material Requirements

Determine rail section (Tee or girder) to be used on all new construction and decide if existing BART area track is suitable or should be replaced. Verify proposed switch locations and material required.

#### C.4 Material Availability

Determine availability of selected rail section (domestic and foreign) and delivery timetable. Determine availability of track switches and any overhead equipment and their fabrication timetable. If any components are of foreign manufacture, examine "Buy American" and "Ship American" procedures.

#### C.5 Preliminary Track Design

Prepare preliminary design for the track work and any modifications to the overhead system that the operational requirements have identified. Identify any potential utility conflicts.

### D. Boarding Islands

#### D.1 Proposed Location

Review and confirm locations of proposed loading islands based on preliminary operating requirements. Examine locations of potential utility conflicts. Review and confirm individual island size.

#### D.2 Architectural Concept

Prepare architectural concept for islands for presentation to the CAC, Art Commission, etc. Include material choice for islands (brick & granite and alternates); pedestrian railing design and materials; gore end traffic delineation (granite bollards or alternates); handicap ramp design and materials. Prepare backup data for various material options including construction and maintenance costs.

#### D.3 Material Choice

Determine materials for boarding islands based on architectural concept and consensus of various review agencies and negotiate material and concept approval. Determine materials for island in Fremont Street.



## D.4 Preliminary Design

Prepare preliminary design for boarding islands. Identify potential utility conflicts.

E. Traffic

## E.1 Existing Conditions

Determine existing traffic flows (vehicle, transit and pedestrian) both in Market Street and cross-streets. Determine signaling pattern and impact on project area. Determine delivery requirements to local business. Examine conditions for 7 day week and 24 hour day construction operations.

## E.2 Operational Requirements

Determine operational requirements during construction for MUNI, police, fire, traffic, pedestrians and CAC. Determine various special traffic requirements (Christmas shutdown, special events, parades, etc.).

## E.3 Staging Assumptions

Examine various construction staging assumptions and impact on operational requirements. Include single lane, multiple lane, full block and continuous block construction activity and varied work shifts (nights, weekends, extended shifts, etc.).

## E.4 Detouring Options

Examine various detouring options for vehicular, pedestrian and transit traffic. Examine major detouring possibilities during limited construction periods (i.e., total block detouring).

F. Signals and Signs

## F.1 Existing Conditions

Examine the condition of existing signals and signs (traffic, pedestrian, MUNI, handicap, etc.) and prepare a report detailing type, location, existing condition, and repairs required. Determine location, type and condition of any signal or sign not installed. Determine existence of any original concept signal or sign replacement parts.

## F.2 Operational Requirements

Determine operational requirements for signals and signs including: temporary transit signals and signs during construction indicating revised service, routing changes, temporary loading areas; traffic and pedestrian detouring signals and signs during construction; permanent changes to signals and signs.

## F.3 Architectural Concept

Determine feasibility of preparing a new Architectural Concept for Market Street signals and signs. Obtain Management consensus. Include in the concept: generic equipment; aesthetically complimentary and functionally effective design; future maintenance requirements and accessibility; fabrication; installation; maintenance costs; conformance with applicable traffic control standards.





#### F.4 Material Requirements

If architectural concept implemented (completely or partially), determine material requirements to carry out. If existing system is to remain, determine materials needed to complete repairs. Determine if required materials are "off the shelf" standard components or specialty items.

#### F.5 Material Availability

Determine availability of materials needed to carry out architectural concept and repair of existing components. Determine source of "off the shelf" components, fabrication and delivery time for standard components and speciality items.

#### F.6 Preliminary Design

Prepare preliminary design. Include facility relocation, facility repair, new installation requirements, potential utility conflicts, acceptable temporary installations, etc.

### G. Crosswalks

#### G.1 Existing Conditions

Determine condition of existing crosswalks, Eighth to Twelfth Streets and identify areas to be repaired. Identify existing utilities in existing and proposed crosswalk locations. Identify any location that requires immediate temporary repair. Identify other locations in the San Francisco area with either brick or other type of speciality crosswalk installations. Examine locations and determine suitability of installation. Obtain various maintenance histories.

#### G.2 Architectural Concept

Prepare various concepts for proposed crosswalk construction / reconstruction. Determine installation and maintenance costs and maintenance requirements. Construct test areas if appropriate. Prepare presentation for CAC, Art Commission, etc. to develop consensus. Identify any proposed changes in crosswalk alignment or location. Develop treatment for track work in crosswalk area.

#### G.3 Material Choice

Determine materials for crosswalks based on architectural concept and consensus of various review agencies. Negotiate material and concept approval.

#### G.4 Preliminary Design

Prepare preliminary design for both new construction and repair / reconstruction. Identify areas of potential utility conflicts.

### H. Curbs, Gutters & Sidewalks

#### H.1 Existing Conditions

Determine existing condition of curbs, gutters and sidewalks. Identify all areas that need repair and determine severity of the problem. Define any areas that require immediate temporary repair. Using proposed boarding island locations, identify locations for proposed sidewalk narrowing. Identify existing utilities and any subsidewalk basements in these areas.



## H.2 Architectural Concept

Develop architectural concept for presentation to CAC, Art Commission, etc. Include various material options for curbs (granite and alternates) and gutters (granite and alternates). Prepare back-up data for various material options including feasibility, aesthetic value, construction cost, maintenance costs and requirements. Include both new work and repair/replacement of existing.

## H.3 Material Choice

Determine materials for curbs and gutters based on architectural concept and consensus of various review agencies. Negotiate material and concept approval. Identify locations to stockpile maintenance material.

## H.4 Sidewalk Legislation

Determine need for and prepare sidewalk legislation for any sidewalk changes (narrowing).

## H.5 Preliminary Design

Prepare preliminary design for both new installations and repair/replacement of existing work. Identify locations of potential utility and subsidewalk conflicts.

# I. Street Furniture

## I.1 Existing Conditions

Determine existing condition and location of kiosks, news racks, bicycle racks and granite benches. Investigate condition of lighting system for kiosks. Identify utilities present in street furniture areas.

## I.2 Operational Requirements

Determine operational requirements including: functional requirements for kiosks; required locations for benches; legislative and operational requirements for news racks.

## I.3 Architectural Concepts

Develop architectural concept including: functional modifications to kiosks (plexiglass covering); gang dispensers for news racks; functional modifications to and relocation/repair of existing granite benches (or alternative material).

## I.4 Material Choices

Determine material choices for kiosks, news racks and benches based on architectural concept and consensus of various review agencies. Negotiate material and concept approval. Identify locations to stockpile maintenance material.

## I.5 Preliminary Design

Prepare preliminary design to include: modification to or removal of kiosks; design and location of newspaper racks; removal of bicycle racks; design and location of benches.





J. Trees

## J.1 Existing Conditions

Determine existing conditions including: survey of existing trees detailing damaged, diseased or undersized trees; trees that require relocation based on preliminary boarding island locations; existing utilities in preliminary boarding island locations. Determine maintenance requirements through the proposed end of construction (Thanksgiving 1989). Identify any location that requires immediate temporary repair. Determine status (functionality) of existing irrigation and tree up-light systems. Determine condition and detail any work required on tree grates. Determine quantities and location of any replacement material or tree stockpile.

## J.2 Operational Requirements

Determine operational requirements for tree up-light system and irrigation system. Determine requirements for replacing damaged, diseased or undersized trees.

## J.3 Material Requirements

Determine material requirements to complete relocation and replacement of existing trees. Determine material requirements and quantities to restore the tree up-light and irrigation systems if required by operational requirements. Determine material requirements for installing/repair of tree grates.

## J.4 Material Availability

Determine material availability for replacement trees and any climatic adjustment necessary. Determine material availability for tree pit grates.

## J.5 Preliminary Design

Prepare preliminary design for tree relocation/replacement and rehabilitation/repair/replacement/abandonment of existing up-light system and irrigation system as required. Identify potential utility conflicts.

K. Handicap Ramps

## K.1 Existing Conditions

Determine location and condition of existing handicap ramps. Using proposed boarding island and crosswalk locations, identify handicap ramps that will require relocation. Identify existing utilities in handicap ramp areas.

## K.2 Subsidewalk Basements

Identify location and construction of any subsidewalk basements in the handicap ramp areas. Identify any utilities in these basements.

## K.3 Preliminary Design

Prepare preliminary design for handicap ramps to new design standard (ramp totally in sidewalk area). Identify any potential utility conflicts. Identify any potential subsidewalk basement conflicts.

L. Art Program

## L.1 Existing Conditions

Examine existing conditions to determine present location of existing art pieces and potential sites for future installations. Identify existing utilities in both areas.



## L.2 Architectural Concept

Prepare architectural concept to include both installed art pieces (plazas, waiting areas and major pedestrian areas) and seasonal, changing installations.

## L.3 Concept Review &amp; Approval

Submit concept for review and approval by CAC, etc. Negotiate final concept approval.

## L.4 Preliminary Design

Do preliminary design to implement program. Identify any utility conflicts.

M. City Utilities

The term City Utilities as used in this plan indicates City owned utilities that will be relocated as part of the Market Street Transit Thoroughfare Project. They include:

1. AWSS facilities
2. Street Lighting facilities
3. Traffic Signal facilities
4. Tree Pit Irrigation facilities
5. Hetch Hetchy facilities
6. Municipal Railway facilities
7. DPW facilities
8. May include SFWD and/or BART facilities

## M.1 Existing Conditions

Survey existing conditions to determine location of existing facilities. Examine facilities to determine condition and need for repair/replacement. Identify any condition that requires immediate temporary repair.

## M.2 Identify Conflicts

Identify potential conflicts based on existing conditions, proposed island locations, proposed sidewalk realignment and proposed street grades.

## M.3 Operational Requirements

Determine operational requirements that must be met during both actual construction and relocation/repair/reconstruction of facilities.

## M.4 Facility Changes

Identify any proposed or potential facility changes (additions or revisions) and priority of changes.

## M.5 Preliminary Design

Prepare preliminary design for facility changes and relocations.

N. Catch Basins

## N.1 Existing Conditions

Examine existing conditions including: condition and location of existing storm water inlets; functionality of existing design (catch basin vs. storm water inlet, type of frame & cover, maintenance accessibility, etc.). Identify location of existing utilities. Identify location of proposed boarding islands and sidewalk realignment. Identify existing and proposed handicap ramp locations.





## N.2 Operational Requirements

Determine operational requirements including: drainage requirements based on preliminary design; system modifications based on maintenance requirements; relocation criteria based on sidewalk realignment and handicap ramp replacement. Determine if the existing storm water inlet frames and covers present a potential bicycle hazard.

## N.3 Preliminary Design

Prepare preliminary design for relocation and repair / reconstruction of facilities. Identify potential utility conflicts.

## O. Sewers

### O.1 Existing Conditions

Determine location and verify condition of existing sewers. TV small diameter pipe sewers and visually inspect brick sewers. Determine location and depth of building side sewers. Determine current and potential flow capacities. Identify related work that might impact existing conditions (future contracts, new services, etc.). Determine location of existing utilities.

### O.2 Operational Requirements

Determine operational requirements based on existing conditions and anticipated requirements. Determine facilities that must be maintained during construction. Examine potential flow diversion schemes. Examine any scheduling constraints that would impact construction.

### O.3 Preliminary Design

Prepare preliminary design. Determine potential utility conflicts.

## P. Private Utilities

The term Private Utilities as used in this plan indicates City, Public and Private utilities that will be relocated before the start of construction of the Market Street Transit Thoroughfare Project. They include:

1. Pacific Bell facilities
2. Pacific Gas & Electric facilities
3. GTE/Sprint facilities
4. Viacom Cablevision facilities
5. Western Union facilities
6. May include SFWD and/or BART facilities

### P.1 Existing Conditions

Survey existing conditions to determine location of existing facilities and validity of utility maps. Examine facilities to determine condition and need for repair/replacement.

### P.2 Identify Conflicts

Identify potential conflicts based on existing conditions, proposed boarding island locations, proposed sidewalk realignment and proposed street grades.

### P.3 Facility Changes

Identify any proposed or potential facility changes (additions or revisions) and priority of changes.



P.4 Schedule of Work

Determine schedule for repair of existing facilities and facility changes. All private utility work should be completed before April 1, 1988.

P.5 Coordination of Work

Coordinate construction work with other utilities through CULCOP.





## Preliminary Engineering Linear Responsibility Chart

	DPW			PUC			CAC	Other see Notes
	PMD	Eng	Oper	MUNI	P&D	Fin		
P = Prime Responsibility								
S = Supporting Responsibility								
C = Consulted or Informed								
<b>A. Management</b>								
A.1 Project Management	P							
A.2 Concept Review	P	S	S	S	S	S	C	C-OF
A.3 Funding Coordination	P							
A.4 Public Information	S			P			C	
A.5 Grants Administration	S	S				P		
A.6 Contract Administration	S	P				S		
<b>B. Street Regrading / Repaving</b>								
B.1 Existing Conditions	C	P						
B.2 Operational Requirements	S	P		S				S-CWP
B.3 Preliminary Design	S	P		S				
<b>C. Track Work</b>								
C.1 Existing Conditions	C	S		P				
C.2 Operational Requirements	S	S		P				
C.3 Material Requirements	C	S		P				
C.4 Material Availability	S	P		S		C		
C.5 Preliminary Track Design	C	P		S				
<b>D. Boarding Islands</b>								
D.1 Proposed Location	C	C	S	P				
D.2 Architectural Concept	S	S		S	P		C	C-Art
D.3 Material Choice	S	S	S	P	S		C	C-Art
D.4 Preliminary Design	C	P	S	S	S			
<b>E. Traffic</b>								
E.1 Existing Conditions	C	S	P	S				
E.2 Operational Requirements	C		P	S+			C	S-#1
E.3 Staging Assumptions	C	S	P	S			C	
E.4 Detouring Options	C		P	S+				S-#1
<b>F. Signals &amp; Signs</b>								
F.1 Existing Conditions	C	S	P					S-DE
F.2 Operational Requirements	C		P	S+				
F.3 Architectural Concept	C		P	S	S		C	C-Art
F.4 Material Requirements	C		P	S				S-DE
F.5 Material Availability	C	S	P					
F.6 Preliminary Design	C	S	P	S				S-DE
<b>G. Crosswalks</b>								
G.1 Existing Conditions	C	P	S					
G.2 Architectural Concept	S	P	S		S		C	C-Art
G.3 Material Choice	S	P	S		S		C	C-Art
G.4 Preliminary Design	C	P	S	C				



## Preliminary Engineering Linear Responsibility Chart

P = Prime Responsibility  
S = Supporting Responsibility  
C = Consulted or Informed

	DPW			PUC			CAC	Other see Notes
	PMD	Eng	Oper	MUNI	P&D	Fin		
<b>H. <u>Curbs, Gutters &amp; Sidewalks</u></b>								
H.1 Existing Conditions	C	P	S					
H.2 Architectural Concept	S	P	S		S		C	C-Art
H.3 Material Choice	S	P	S		S		C	C-Art
H.4 Sidewalk Legislation	C	P						S-CP
H.5 Preliminary Design	C	P		C				
<b>I. <u>Street Furniture</u></b>								
I.1 Existing Conditions	C	P						
I.2 Operational Requirements	C	P		S			C	
I.3 Architectural Concept	S	P					C(CP)	C-Art
I.4 Material Choices	S	P	S				C(CP)	C-Art
I.5 Preliminary Design	C	P	S	S			S	
<b>J. <u>Trees</u></b>								
J.1 Existing Conditions	C	P	S					
J.2 Operational Requirements	C	P	S					
J.3 Material Requirements	C	P	S					
J.4 Material Availability	C	P	S					
J.5 Preliminary Design	C	P						
<b>K. <u>Handicap Ramps</u></b>								
K.1 Existing Conditions	C	P						
K.2 Subsidewalk Basements	C	P						
K.3 Preliminary Design	C	P	S	S			C	
<b>L. <u>Art Program</u></b>								
L.1 Existing Conditions	C	S						P-Art
L.2 Architectural Concept	S		C	C			C	P-Art
L.3 Concept Review & Approval	S						C	P-Art
L.4 Preliminary Design	C	S	C	C				P-Art
<b>M. <u>City Utilities</u></b>								
M.1 Existing Conditions	C	S						P-#2
M.2 Identify Conflicts	C	P						
M.3 Operational Requirements	C							P-#2
M.4 Facility Changes	C							P-#2
M.5 Preliminary Design	C	P						S-#2
<b>N. <u>Catch Basins</u></b>								
N.1 Existing Conditions	C	S	S					P-CWP
N.2 Operational Requirements	C	S	S					P-CWP
N.3 Preliminary Design	C	S						P-CWP



## Preliminary Engineering Linear Responsibility Chart

	DPW			PUC			CAC	Other see Notes
	PMD	Eng	Oper	MUNI	P&D	Fin		
P = Prime Responsibility S = Supporting Responsibility C = Consulted or Informed								
O. <u>Sewers</u>								
O.1 Existing Conditions	C	S	S					P-CWP
O.2 Operational Requirements	C		S					P-CWP
O.3 Preliminary Design	C	S						P-CWP
P. <u>Private Utilities</u>								
P.1 Existing Conditions	C	S						P-#3
P.2 Identify Conflicts	C	S						P-#3
P.3 Facility Changes	C	S						P-#3
P.4 Schedule of Work	P	S						S-#3
P.5 Coordination of Work	S	P						S-#3

### Notes - Linear Responsibility Chart

DPW PMD - Project Management Division

DPW Engineering includes:

Division of Survey & Mapping

Division of Streets & Highways

Division of General Engineering Services - which includes:

Contract Preparation

Electrical Section

Structural Section

Mechanical Section

Landscape Architecture

Division of Construction Management

DPW Operations includes:

Traffic Engineering & Operations

Bureau of Street Cleaning - Urban Forestry

Bureau of Street & Sewer Repair

Bureau of Building Repair

PUC MUNI - Municipal Railway

P&D - Planning & Development

Fin - Finance Bureau

Other: Art = Art Commission

CP = City Planning

CWP = DPW Clean Water Program

DE = Department of Electricity

OF = DPW Office of Financial Management & Administration (OFFMA)

#1 = SF Fire Dept. & SF Police Dept.

#2 = AWSS, Street Lighting, Traffic Signals, Hetch Hetchy, MUNI, DPW  
(may include SFWD and/or BART)

#3 = Pac Tel, PG&E, GTE, WU, Viacom (may include SFWD and/or BART)





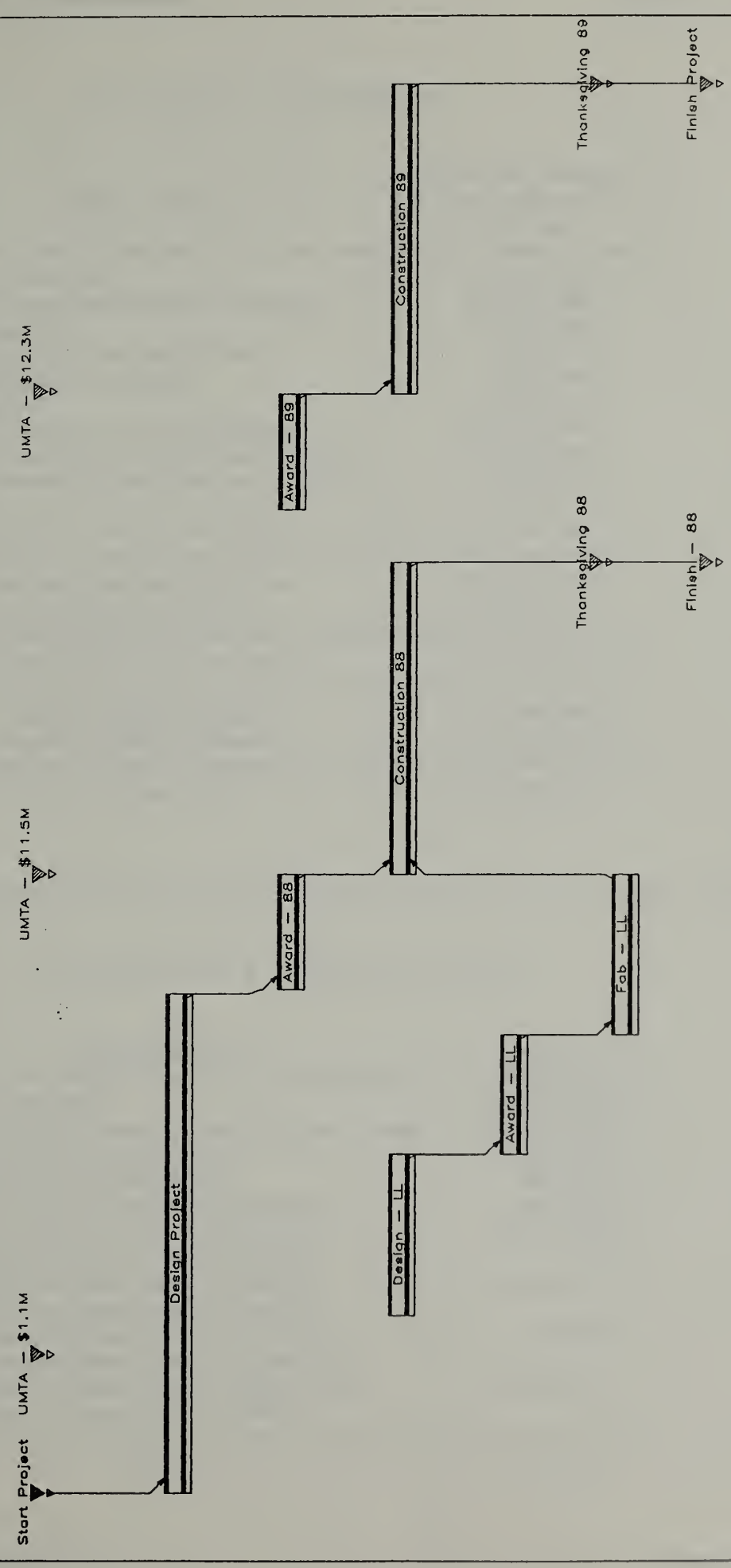
# Market Street Transit Thoroughfare

## LEGEND

- Critical Activity
- Non-Critical Activity
- Summary
- Hammock
- Event
- Plan
- Early
- Late

prepared by  
Project Management Division, DPW  
(415) 558 - 4816

1986	1987												1988												1989											
Nov	Dec	Jan	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		



Nov	Dec	Jan	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1986	1987	1988										
			Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
											1989	





## Project Budget

Budget Items	Forecast Budget (includes 4% escalation)
Traffic Control	\$1,353,000
Street Area Regrading / Repaving	\$2,623,000
Track Work	\$5,181,000
Public Utilities Relocation	\$509,000
MUNI Boarding Islands	\$943,000
Crosswalks	\$3,972,000
Curbs, Gutters and Sidewalks	\$2,168,000
Street Furniture, Trees and Signage	\$1,732,000
Other (Ramps, Catch Basins, etc.)	\$546,000
Procure Long Lead Items	\$1,784,000
Construction Contract Cost	\$20,811,000
Contingencies (10%)	\$2,081,000
Total Construction Cost	\$22,892,000
Design Engineering	\$1,800,000
Construction Management	\$2,308,000
Total Project Cost	\$27,000,000

## Financial Resources

Funding Source	Amount
Gas Tax Revenues	\$2,239,276
Market Street Beautification Bond Funds	\$157,605
State Guideway Resources	\$2,197,000
Bridge Toll Net Revenues	\$242,000
Federal FAU Resources (CA-23-2029)	\$949,111
Federal UMTA Section 9 Resources (estimated award April, 1988)	\$9,277,340
Federal UMTA Section 9 Resources (estimated award April, 1989)	\$9,833,981
Additional Bridge Toll Net Revenues (estimated award April, 1989)	\$440,000
Additional State Guideway Resources (estimated award July, 1989)	\$2,200,000
Total	\$27,536,313



Design Engineering Budget	Forecast
DPW Force Account Plan including Indirect Costs	\$1,300,000
MUNI Force Account Plan including Indirect Costs	\$60,000
Consultant - Public Information	\$90,000
Consultant - Aerial Surveys	\$10,000
Consultant - Track Design	\$200,000
Consultant - Speciality Materials	\$60,000
Contingency	\$80,000
Total	\$1,800,000

Construction Management Budget	Forecast
DPW Force Account Plan including Indirect Costs	\$1,900,000
MUNI Force Account Plan including Indirect Costs	\$250,000
Consultant - Public Information	\$158,000
Total	\$2,308,000

Wish List	Forecast (includes 4% escalation)
1. Track Work - 12th to Duboce	\$634,000
3. MUNI transit shelter work	\$0
4. Modify Hallidie Plaza Lights	\$32,000
10. Modify Kiosks	\$27,000
11. Install news racks	\$55,000
13. Repair/replace granite benches	\$162,000
17. Repair tree pit irrigation system	\$216,000
18. Install trash receptacles	\$97,000
19. Art Program (2% of total construction cost)	\$458,000
Total Wish List Cost	\$1,681,000



Budget Assumptions:

1. The Project Budget calls for expending \$27,000,000 to reconstruct the Municipal Railway streetcar tracks on Market Street from Fremont to Twelfth Streets and make related improvements. To stay within this budget, it was necessary to eliminate granite gutters from the project. We feel elimination of these gutters does not detract from the project because the existing gutters have proven to be a serious maintenance problem. Although brick crosswalks are included in the project, we are continuing our efforts to identify substitute materials which will maintain the visual appearance of the street at a substantially lower maintenance cost. A sample of the proposed materials will be installed at Eleventh and Market Streets for review by all concerned. We realize that substitution of materials will require review by the Public Utilities Commission, the Art Commission, and the Board of Supervisors.
2. The Forecast budget escalates the verified budget by 4% per year to the mid point of Construction (Feb. 1, 1989). This escalation factor increased the Total Project Cost by \$2,037,000. A change in the escalation rate of 1% per year changes the Forecast Budget by \$250,000.







